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| EXAMINER | |
|---|---|
| CROWELL, ANNA M | |
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| 1763 | |

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 09/821,027 | CHEN ET AL. |
| | Examiner | Art Unit |
| | Michelle Crowell | 1763 |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-25 and 28-40* is/are pending in the application.

4a) Of the above claim(s) *1-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-25 and 28-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Objections*

1. Claim 34 is objected to because of the following informalities: In line 6, the word "nged" is misspelled. Appropriate correction is required.

### *Election/Restrictions*

1. Applicant's election with traverse of claims 11-25, and 28-30 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the inventions of claims 1 and 31 are not separate and distinct. This is not found persuasive because (1) restriction is based on claims as originally filed and claims 1 and 31 have different classifications.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12-25 and 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 12, 21-23, 34, the phrase, "remainder of the coil" is confusing. Examiner suggests changing that phrase to "**another of the windings**". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 11 and 31 are rejected under 35 U.S.C. 102(a) as being anticipated by Chu et al. (U.S. 6,051,073).

Referring to Figure 2 and column 5, line 48-column 6, line 16, Chu et al. discloses an inductive plasma processor 200 for processing a workpiece 203, comprising a plasma excitation coil , the coil including plural parallel connected windings 40, an AC, RF source 66 for supplying power to the plural parallel connected windings (col. 5, lines 50-51), the source being connected to the plural parallel connected windings for causing current from the source to flow in parallel to the plural parallel connected windings, variable impedance arrangements 50 and 58 respectively coupled with the plural parallel connected windings for varying the currents flowing from the source to each of the plural parallel connected windings, and a controller 62 coupled to the source and components for directly varying the total output power of the source and the total power the source supplies to the plural parallel connected windings and varying values of components of the variable impedance arrangements so that for different distributions of electromagnetic fields different amounts of total power are applied to the plural parallel connected windings (col. 5, lines 57-60), and the amount of current applied to the individual plural windings of the plural parallel connected windings so that for different distributions of

electromagnetic fields different amounts of current are applied to the individual windings (col. 5, lines 50-55).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 12, 32-35, 37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (U.S. 6,052,073).

Regarding claim 12 and 34, the apparatus of Chu et al. is capable of controlling the total power and the variable impedance arrangements in the different windings. Therefore, it would have been an obvious choice of design to one of ordinary skill in the art to arrange the controller so that the current flowing in one of the windings will be

substantially constant while the current in the remaining winding changes in order to control the distribution and the uniformity of the plasma, therefore controlling the process being performed within the apparatus.

Regarding claims 32-33, the apparatus of Chu et al. includes plural parallel windings arranged so one of the windings is an exterior winding 40 located so electromagnetic fields generated by it are in proximity to a peripheral wall 14 of the chamber, and electromagnetic fields generated by the remainder of the coil 40 are remote from the chamber peripheral wall. The controller of Chu et al. is capable of varying the total power and the current in the each winding. Therefore, it would have been an obvious choice of design to one of ordinary skill in the art to arrange the controller so that the current applied to the exterior winding is varied in order that the electromagnetic field generated by the exterior winding exceeds, is less than, or is the same as the electromagnetic field generated by the remainder of the coil in order to control the distribution and the uniformity of the plasma, therefore controlling the process being performed within the apparatus.

Regarding claims 35, 37, and 39, the apparatus of Chu et al. includes plural windings 46 extending radially and circumferentially between a pair of excitation terminals connected for receiving power from output terminals of the source 66 (Fig. 1).

9. Claims 11, 12, 31-35, 37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. 5,907,221) in view of Tomioka et al. (U.S. 5,897,713) or Chu et al. (U.S. 6,052,073).

Referring to Figure 6 and column 4, lines 4-26, Sato et al. discloses an inductive plasma processor for processing a workpiece 35, comprising a plasma excitation coil, the coil including plural parallel connected windings 150a-k, an AC, RF source 170 for supplying power to the plural parallel connected windings, the source being connected to the plural parallel connected windings for causing current from the source to flow in parallel to the plural parallel connected windings, variable impedance arrangements 160a-k and 165a-k respectively coupled with the plural parallel connected windings for varying the currents flowing from the source to each of the plural parallel connected windings (col.4, lines 16-21), and a controller 180 couple to components for varying the amount of current applied to the individual plural windings of the plural parallel connected windings so that for different distributions of electromagnetic fields different amounts of current are applied to the individual winding.

Sato et al. fails to teach a controller for directly varying the total output of power applied to the plural parallel connected windings.

Referring to column 8, lines 34-37, Tomioka et al. teaches an inductive plasma processor comprising a controller 14 for directly varying the total output power the source supplies to the plural parallel connected windings. By using a controller, the frequency, phase, and power of the source 7 are controlled. Similarly, referring to column 4, lines 18-20, Chu et al. teaches an inductive plasma processor comprising a controller 62 for varying the total power the source supplies to the plural parallel connected windings. By using a controller, the frequency, phase, and power of the source 66 are controlled. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a controller for varying the total amount of power applied

to the plural parallel connected windings as taught by Tomioka et al. or Chu et al. in the apparatus of Sato et al. because this allow the frequency, phase, and power of the source to be controlled.

Regarding claim 12 and 34, the apparatus of Sato et al. in view of Tomioka et al or Chu et al. is capable of controlling the total power and the variable impedance arrangements in the different windings. Therefore, it would have been an obvious choice of design to one of ordinary skill in the art to arrange the controller so that the current flowing in one of the windings will be substantially constant while the current in the remaining winding changes in order to control the distribution and the uniformity of the plasma, therefore controlling the process being performed within the apparatus.

Regarding claims 32-33, the apparatus of Sato et al. in view of Tomioka et al or Chu et al. includes plural parallel windings arranged so one of the windings is an exterior winding 40 located so electromagnetic fields generated by it are in proximity to a peripheral wall 14 of the chamber, and electromagnetic fields generated by the remainder of the coil 40 are remote from the chamber peripheral wall. The controller of Chu et al. is capable of varying the total power and the current in the each winding. Therefore, it would have been an obvious choice of design to one of ordinary skill in the art to arrange the controller so that the current applied to the exterior winding is varied in order that the electromagnetic field generated by the exterior winding exceeds, is less than, or is the same as the electromagnetic field generated by the remainder of the coil in order to control the distribution and the uniformity of the plasma, therefore controlling the process being performed within the apparatus.

Regarding claims 35, 37, and 39, the apparatus of Sato in view of Tomioka et al or Chu et al. includes plural windings 150a, 150b (Sato et al.) extending radially and circumferentially between a pair of excitation terminals connected for receiving power from output terminals 165a, 165b of the source 170 (Fig. 6).

10. Claims 13-16, 18-25, 28-30, 36, 38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (U.S. 6,052,073) in view of Chen et al. (WO 00/00993).

The teachings of Chu et al. have been discussed above.

Chu et al. fails to specifically teach varying the location and the value of the maximum amplitude of a standing wave in the windings.

Referring to Figures 3, 4, 6, and page 6, line 19 – page 7, line 22, page 8, line 4 – page 13, line 12, and page 14, line 19 – page 16, line 6, Chen teaches an inductive plasma processor wherein each of the impedance arrangements includes a variable reactance C1-C4 coupled to its respective winding coil 1 and coil 2, the variable reactance of each impedance arrangement being arranged for varying the location (page 15, line 25-page 16, line 6) and the value of the maximum amplitude (page. 6, lines 19-24) of a current in its respective winding. By varying the location and the value of the maximum amplitude of the current in the respective windings, the plasma density in different radial and azimuthal regions can be varied and controlled, and therefore, radially and azimuthally uniform plasma can be achieved (abstract). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to vary the location and the value of the maximum amplitude of a standing wave in the respective windings

as taught by Chen et al. in the apparatus of Chu et al. since the controller of Chu et al. is capable of varying the variable reactance of each impedance arrangement, and furthermore uniform plasma is achieved.

Chu et al. fails to teach each of the windings including first and second end terminals which are connected to first and second capacitors.

Chen et al. teaches an inductive plasma processor wherein each of the windings coil 1 and coil 2 including first and second end terminals and each of the impedance arrangements includes first and second capacitors C1-C4, each of the first capacitors C1 and C2 being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors in series with its respective second terminal and ground (Figures 4 and 6, page 8, lines 4-24, page 15, lines 4-8). By providing two capacitors for each coil, a more symmetric current distribution is achieved along the coil. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for each winding to have first and second capacitors connected to first and second end terminals as taught by Chen et al. in the apparatus of Chu et al. since a more symmetric current distribution is achieved along the coil.

Chu et al. fails to teach one of the windings is an interior winding and another of the windings is an exterior winding surrounding the interior winding.

Chen et al. teaches a vacuum plasma processor wherein one of the windings is an interior winding and another of the windings is an exterior winding surrounding the interior winding since uniform plasma density is achieved in the chamber (col. 4. lines 1-8). Thus, it would have been obvious to one of ordinary skill in the art at the time of the

invention to rearrange the windings of Chu et al. to have one of the windings as interior winding and another of the windings as an exterior winding surrounding the interior winding since uniform plasma density is achieved in the chamber.

11. Claims 13-16, 18-25, 28-30, 36, 38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. 5,907,221) in view of Tomioka et al. (U.S. 5,897,713) or Chu et al. (U.S. 6,052,073) as applied to claims 11, 12, and 31-33 above, and further in view of Chen et al. (WO 00/00993).

The teachings of Sato et al. in view of Tomioka et al. or Chu et al. have been discussed above.

Sato et al. in view of Tomioka et al. or Chu et al. fails to specifically teach varying the location and the value of the maximum amplitude of a standing wave in windings.

Referring to Figures 3, 4, 6, and page 6, line 19 – page 7, line 22, page 8, line 4 – page 13, line 12, and page 14, line 19 – page 16, line 6, Chen teaches an inductive plasma processor wherein each of the impedance arrangements includes a variable reactance C1-C4 coupled to its respective winding coil 1 and coil 2, the variable reactance of each impedance arrangement being arranged for varying the location (page 15, line 25-page 16, line 6) and the value of the maximum amplitude (page. 6, lines 19-24) of a current in its respective winding. By varying the location and the value of the maximum amplitude of the current in the respective windings, the plasma density in different radial and azimuthal regions can be varied and controlled, and therefore, radially and azimuthally uniform plasma can be achieved (abstract). Thus, it would have been obvious to one of

ordinary skill in the art at the time of the invention to vary the location and the value of the maximum amplitude of a standing wave in the respective windings as taught by Chen et al. in the apparatus of Sato et al. in view of Tomioka et al. or Chu et al since the controller of Sato et al. in view of Tomioka et al. or Chu et al. is capable of varying the variable reactance of each impedance arrangement, and furthermore uniform plasma is achieved.

Sato et al. in view of Tomioka et al. or Chu et al. fail to teach each of the windings including first and second end terminals which are connected to first and second capacitors.

Chen et al. teaches an inductive plasma processor wherein each of the windings coil 1 and coil 2 including first and second end terminals and each of the impedance arrangements includes first and second capacitors C1-C4, each of the first capacitors C1 and C2 being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors in series with its respective second terminal and ground (Figures 4 and 6, page 8, lines 4-24, page 15, lines 4-8). By providing two capacitors for each coil, a more symmetric current distribution is achieved along the coil. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for each winding to have first and second capacitors connected to first and second end terminals as taught by Chen et al. in the apparatus of Sato et al. in view of Tomioka et al. or Chu et al. since a more symmetric current distribution is achieved along the coil.

Sato et al. in view of Tomioka et al. or Chu et al. fails to teach one of the windings is an interior winding and another of the windings is an exterior winding surrounding the interior winding.

Chen et al. teaches a vacuum plasma processor wherein one of the windings is an interior winding and another of the windings is an exterior winding surrounding the interior winding since uniform plasma density is achieved in the chamber (col. 4. lines 1-8). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to rearrange the windings of Sato et al. in view of Tomioka et al. or Chu et al. to have one of the windings as interior winding and another of the windings as an exterior winding surrounding the interior winding since uniform plasma density is achieved in the chamber.

12. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (U.S. 6,052,073) in view of van Gogh et al. (U.S. 6,579,426).

The teachings of Chu et al. have been discussed above.

Chu et al. fails to teach each of the windings including first and second end terminals which are connected to first and second capacitors.

Van Gogh et al. teaches an inductive plasma processor wherein a winding 104 including a first and second end terminals b and d and each of the impedance arrangements includes first and second capacitors 310 and 308, each of the first capacitors 310 and 308 being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors in series with its respective second terminal and ground (Figures 2 and 3,

col.4, lines 54-64, col. 5, line 45 - col. 6, line 6). By providing two capacitors for each coil, a more symmetric current distribution is achieved along the coil. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for each winding to have first and second capacitors connected to first and second end terminals as taught by van Gogh et al. in the apparatus of Chu et al. since a more symmetric current distribution is achieved along the coil.

13. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. in view of Tomioka et al. as applied to claims 11, 12, and 31-33 above, and further in view of van Gogh et al. (U.S. 6,579,426).

The teachings of Sato et al. in view of Tomioka et al. or Chu et al. have been discussed above.

Sato et al. in view of Tomioka et al. or Chu et al. fails to teach each of the windings including first and second end terminals which are connected to first and second capacitors.

Van Gogh et al. teaches an inductive plasma processor wherein a winding 104 including a first and second end terminals b and d and each of the impedance arrangements includes first and second capacitors 310 and 308, each of the first capacitors 310 and 308 being connected in series with its respective first terminal for supplying RF energy from the RF source to the respective winding, each of the second capacitors in series with its respective second terminal and ground (Figures 2 and 3, col.4, lines 54-64, col. 5, line 45 - col. 6, line 6). By providing two capacitors for each coil, a more symmetric current distribution is achieved along the coil. Thus, it would

have been obvious to one of ordinary skill in the art at the time of the invention for each winding to have first and second capacitors connected to first and second end terminals as taught by van Gogh et al. in the apparatus of Sato et al. in view of Tomioka et al. or Chu et al. since a more symmetric current distribution is achieved along the coil.

***Response to Arguments***

Applicant has requested that the Examiner explain why the phrase "the remainder of the coil" is confusing in claim 12. The specification supports the current in one winding to be substantially constant, while the current in another winding is changing (pg 19, lines 1-15). However, the claim reads on one winding having the current constant and changing, which is confusing on how this done and furthermore is not supported by the specification.

Applicant has argued that Chu et al. has no specific indication that the controller directly controls the output power of the generator. However, column 4, lines 18-19 and column 5, lines 58-59, states the output power 66 is controlled directly from the controller 62.

Applicant has argued that Sato et al. fails to achieve direct control of the power supplied to the coils. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Tomioka et al. teaches direct control of the power supplied to the coils. Thus, the combination of Sato et al. in view of Tomioka et al. satisfies the claimed requirement.

Applicant has argued that the there must be some suggestion in the art to provide a controller as set forth in claims 12, 32, 33, 34. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or **in the knowledge generally available to one of ordinary skill in the art.** See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to provide a controller as set forth in claims 12, 32, and 33 is to control the distribution and the uniformity of the plasma, thereby controlling the process being performed within the apparatus. Additionally, it noted that the rejection is over apparatus claims and not method claims. The prior art only has to provide a structure that is capable of performing in the manner claimed and not necessarily have ever been intended to be used in this manner.

Applicant has argued that Tomioka et al. does not disclose plural parallel connected windings. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Sato et al. teaches plural parallel connected coils. Thus, the combination of Sato et al. in view of Tomioka et al. satisfies the claimed requirement.

Applicant has argued that since Tomioka et al. controls the power to the coils for a different reason than the reason Sato et al. wants to control power, and one of ordinary skill in the art would not have combined Tomioka et al. and Sato et al. The motivation to

combine Sato et al. and Tomioka et al. is to allow the frequency, phase, and output power of the source to be controlled and thus enhance overall process control.

Applicant has argued that the Examiner by combining Tomioka et al. with Sato et al. has merely cast around to find references having features defined by applicants' claims and used hindsight to combine them. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Additionally, the motivation to combine Sato et al. and Tomioka et al. is to allow the frequency, phase, and output power of the source to be controlled and thus enhance overall process control.

Applicant has argued that claim 16 requires the source to be an RF source, wherein the frequency of the source and the length of the windings are such that there are no substantial standing wave current variations along the length of each winding. Claim 19 includes a similar limitation, as do claims 24 and 28-30. This limitation is never discussed in the office action. Sato in view of Tomioka et al. teaches an RF source 170 (Sato et al.) and controlling the frequency (Tomioka et al.). Furthermore, if the frequency of the source was selected to be zero or if no power was applied to the coil, no substantial standing wave current variations would occur along the length. Additionally, it is well known in the art alter the length of a winding to achieve a

desired process. Furthermore, it noted that the rejection is over apparatus claims and not method claims. The prior art only has to provide a structure that is capable of performing in the manner claimed and not necessarily have ever been intended to be used in this manner. Thus, the apparatus of Sato et al. in view of Tomioka et al. is capable of controlling the frequency and the length of the windings, and thus having no substantial standing wave current variations along the length of each winding is considered intended use.

Applicant has argued that disclosure of a controller capable of varying the location and value of the maximum amplitude of a standing wave does not mean that Chen et al. has a disclosure of or makes obvious that the feature of adjacent windings having standing wave current maxima that are radially opposite from one another. It noted that the rejection is over apparatus claims and not method claims. The prior art only has to provide a structure that is capable of performing in the manner claimed and not necessarily have ever been intended to be used in this manner. Moreover, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). Similarly, apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). The apparatus of Sato et al. in view of Tomioka et al. and Chen et al is capable of adjusting the standing wave current maxima in each coil, and thus having a standing wave current maxima that are radially opposite from one another is considered intended use.

Applicant has argued that the combination of Chu et al. and Chen et al. is

incorrect because the Chu et al. coil arrangement is so different from the Chen et al. coil arrangement. However, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Thus, the combination of Chu et al. and Chen et al. satisfies the claimed requirement.

***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (571) 272-1432. The examiner can normally be reached on M-F (8:00 - 4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

P. Hassanzadeh
Primary Examiner
AU 1763

AMC